

Message

From: Labiosa, Rochelle [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=DED3654216C9461D95CD5A3CEEC507EF-LABIOSA, ROCHELLE]
Sent: 1/31/2018 4:48:23 PM
To: Brown, Cheryl A. [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=dd6f8a562924439aaf97ca98ddaf1e10-Brown, Cheryl]; Fullagar, Jill [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=7ba061353c314b40a14a8be1ee382ae3-Gable, Jill]; Cora, Lori [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=c8850941bf1540c796559dce75c2f5ee-Cora, Lori]
CC: Cope, Ben [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=497efadd936e4d378225116b8f50fd3f-Cope, Ben]
Subject: RE: Important new paper on pteropod having ability to repair their shell damage due to OA

I agree. In addition – the paper’s hypothesis is based on another paper by Peck et al – but there was a reply to Peck et al. questioning the conclusions, and there is debate as to how/whether the periostracum can compensate for the effects of external shell damage (Peck et al. v. Bednarek et al.), e.g., by maintaining reduced predation as an intact shell would. The paper itself states that “the extent to which this process can protect these animals from the deleterious effects of exposure to undersaturated waters in the natural environment has not been observed” – and indicates that this recent paper demonstrates this but it does not – it does not show that the periostracum compensates (ie reduces predation) but just the ability (for one individual, in unknown exposure conditions as Jill mentions) to create repair patches of some thickness. The Bednarek comment further mentions that the periostracum composition can vary among taxa so any conclusions would be difficult to apply uniformly to other individuals/taxa. Therefore, the concept that the periostracum may compensate for external shell damage has been introduced but there is no scientific consensus yet that it can compensate and reduce predation.

From: Brown, Cheryl A.
Sent: Wednesday, January 31, 2018 8:19 AM
To: Fullagar, Jill <Fullagar.Jill@epa.gov>; Cora, Lori <Cora.Lori@epa.gov>
Cc: Cope, Ben <Cope.Ben@epa.gov>; Labiosa, Rochelle <labiosa.rochelle@epa.gov>
Subject: RE: Important new paper on pteropod having ability to repair their shell damage due to OA

I would agree with Jill’s response; esp item 6. I just wanted to make sure you were aware of this new paper. Talk with you shortly.

Cheryl

From: Fullagar, Jill
Sent: Tuesday, January 30, 2018 5:05 PM
To: Cora, Lori <Cora.Lori@epa.gov>
Cc: Cope, Ben <Cope.Ben@epa.gov>; Labiosa, Rochelle <labiosa.rochelle@epa.gov>; Brown, Cheryl A. <Brown.Cheryl@epa.gov>
Subject: RE: Important new paper on pteropod having ability to repair their shell damage due to OA

Hey Lori,

Deliberative Process / Ex. 5 Here’s a couple of my thoughts; let me know if you guys have others.

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Deliberative Process / Ex. 5

Any other thoughts?

jill

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From: Cora, Lori

Sent: Tuesday, January 30, 2018 4:37 PM

To: Fullagar, Jill <Fullagar.Jill@epa.gov>

Subject: FW: Important new paper on pteropod having ability to repair their shell damage due to OA

Importance: High

Deliberative Process / Ex. 5

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From: Brown, Cheryl A.

Sent: Tuesday, January 30, 2018 11:27 AM

To: Fullagar, Jill <Fullagar.Jill@epa.gov>; Labiosa, Rochelle <labiosa.rochelle@epa.gov>; Cope, Ben <Cope.Ben@epa.gov>; Cora, Lori <Cora.Lori@epa.gov>

Subject: Important new paper on pteropod having ability to repair their shell damage due to OA

Importance: High

<https://phys.org/news/2018-01-sea-butterflies-shell-ocean-acidification.html>
<https://www.nature.com/articles/s41467-017-02692-w>

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